transmitter for broadcast to the digital broadcast receiver as a time-sliced signal. The time-sliced signal comprises a continuous series of transmission bursts.

A DVB-T receiver terminal is able to determine information about IP sessions from IP session announcements. Announcements are structured in a hierarchal manner. At the lowest level, announcements in respect of a subcategory of information services may include a number of messages, each message having information describing the IP session, information descriptive of the content of the IP streams, information concerning the location (e.g. channel frequency, etc.) of the respective IP streams, information about schedules of sessions, and certain other parameters related to it. Above the lowest level, there are hierarchical levels of announcements, each level of which gives information only about announcements on an immediately lower level. The services typically are divided into different categories such that the highest (or root) level may include messages relating one-to-one to the categories of news, sport, entertainment, etc. Announcements in the sport category may then consist of messages each relating to a different one of football, hockey, athletics, etc. There may be any number of levels of announcement. An IP session announcement can be made using a session description protocol (SDP) message, which forms part of a session announcement protocol (SAP) message.

It is common for an IP session announcement at one level in the hierarchy to be transmitted on a channel having a different frequency to a channel on which an IP session announcement on a lower level, for example an immediately lower level, is transmitted. This means that it is not usually possible for a terminal having a single radio receiver to receive announcements on different levels simultaneously.

Summary of the Invention

According to a first aspect of the invention, there is provided a method of operating broadcast or multicast apparatus, the method comprising: controlling the apparatus to broadcast or multicast, in respect of one or more announcements on a lower level and relating to a category of an information service, data indicating a category to which the announcements relate, and data indicating the quantity of announcement information transmitted in respect of the lower level.

8. An information service broadcaster or multicaster as claimed in claim 7, in which the announcement data relates to one or more announcements on an immediately lower level.

9. A method of operating a receiver, the method comprising:

receiving via a receiver announcement data indicating a category to which one or more announcements on a lower level and relating to an information service belong, and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements; and

controlling the receiver to receive announcement data for a period of time dependent at least in part on the quantity data.

10. A method as claimed in claim 9, in which the announcement data relates to one or more announcements on an immediately lower level.

11. A method as claimed in claim 9 or claim 10 in which the controlling step includes directing the receiver to a location received as part of a relevant higher level announcement.

12. A method as claimed in any of claims 9 to 11, further comprising receiving in connection with the higher level announcement information indicating a timeout value, and controlling the receiver to cease receiving announcement data for a period of time dependent the timeout value, and to subsequently resume receiving announcement data.

13. A receiver for receiving announcement data indicating a category to which one or more announcements on a lower layer and relating to an information service belong and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements; and arranged to receive announcement data for a period of time dependent at least in part on the quantity data.

14. A receiver as claimed in claim 13, in which the announcement data relates to one or more announcements on an immediately lower level.

15. A receiver as claimed in claim 13 or claim 14 which is arranged to be directed to a location identified by location information data receivable as part of the higher level announcement.

16. A receiver as claimed in any of claims 13 to 15, which is arranged to cease receiving lower level announcement data for a period of time dependent on a timeout value receivable by the receiver, and to resume subsequently receiving information service data.

17. A receiver as claimed in any of claims 13 to 16, which is a portable, battery-powered receiver.

18. A receiver as claimed in any of claims 13 to 17, which is arranged to receive time-sliced Internet Protocol datacast transmissions.

19. A user interface, useable with an electronic program or service guide, the user interface comprising:

a receiver module arranged to receive data indicating a category to which one or more announcements on a lower level and relating to an information service belong, and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements, and

a display module arranged to display a number of category options, which options are selectable by a user, the number of category options being dependent at least in part on the quantity data.

20. A broadcast or multicast system substantially as shown in and/or as described with reference to Figure 1 of the accompanying drawings.

21. A receiver substantially as shown in and/or as described with reference to Figure 2 of the accompanying drawings.

22. A method of operating a receiver substantially as herein described with reference to Figures 2 and 3 of the accompanying drawings.